



BACKGROUNDER

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Technology Cooperation: Sustaining Economic Growth and Environmental Improvement

For over two decades, U.S. industry has been a world leader in developing energy technologies and implementing environmental policies. Every year, American industry spends more than \$100 billion to protect the environment, and U.S. industry already has environmental technology programs overseas. By providing cleaner, more energy-efficient technologies and know-how to developing countries, the United States can build on its existing efforts and simultaneously help reduce global emissions of greenhouse gases. Technology innovation and cooperation, guided by the marketplace, not government mandates, is the key to addressing the dual challenges of sustaining economic growth and environmental improvement. U.S. business has the opportunity and the know-how to meet this challenge.

What Is Technology Cooperation?

Technology cooperation is aimed at helping developing countries expand their economies and improve their quality of life, while at the same time improving their environmental performance, not only with regard to limiting emissions of greenhouse gases, but to limiting emissions of pollutants such as NO_x and SO₂. Technology cooperation is interpreted broadly to include efforts that combine technology and equipment with "soft" technology -- training, management assistance and software. A major product of the private sector's vast operational experience, soft technology could be one of our country's greatest contributions to developing countries and those with economies in transition.

Importance of Technology Cooperation

The U.N. Intergovernmental Panel on Climate Change (IPCC), charged with investigating the science and economics behind global climate change, predicts that by 2025, non-OECD countries will be responsible for 68 percent of all energy-related carbon dioxide emissions. In fact, both developing countries and former centrally planned economies already emit a far greater amount of greenhouse gases for each unit of GNP than industrialized nations. As developing nations' populations, economies and energy demands increase, this disparity is predicted to widen. If steps are not taken to encourage sound economic and environmental developments in these nations, massive increases in emissions from developing countries would overwhelm any emissions reductions made by industrialized nations. For this reason, developing countries have an important role to play in any strategy to reduce global greenhouse gas emissions. Special consideration should be given to providing appropriate help to these nations in upgrading their environmental policies, industrial performance and resource management.

When technology cooperation occurs with limited government assistance between the American private sector and the private sectors of developing nations, it provides an effective and relatively low-cost means to improve global environmental protection and foster economic development. Given the current high level of energy efficiency in the United States and other developed nations, reducing greenhouse



gas emissions by improving energy efficiency is far more cost-effective in developing and newly developed nations than in industrialized nations.

Technology cooperation also makes economic sense for developed nations, such as the United States. Opening new markets for American technology and services can contribute to a domestic economic growth strategy, providing new opportunities for U.S. industry and American workers while fostering the global cooperation needed for lasting environmental improvements.

Technology Cooperation Between Government and Industry

Although technology cooperation is best achieved between the American private sector and that of the developing nation, many of these countries lack a private sector. Significant improvements are needed within developing countries to encourage cooperative arrangements. Clearly, there is a role for governments, in both developing and developed nations, to play in technology cooperation. The U.S. government is already working to improve technology cooperation between itself and private industry to enhance the competitiveness of U.S. technology. Significant programs are under way at Department of Energy (DOE) National Laboratories, for example, to employ the U.S. government's research capabilities in these new efforts with the private sector. The federal government's resources are important to helping industry identify opportunities for technology cooperation and to providing market-based financing options to encourage the export of American products.

In addition, the United States supports programs at the Agency for International Development, the Export-Import Bank, the World Bank and many regional development banks that could support international technology transfers. The EPA, DOE and the Departments of Commerce (DOC) and State also have important resources and programs that could provide needed information to industry. The DOE's Assisting Deployment of Energy Practice and Technologies (ADEPT) program, for example, will help developing countries and economies in transition select and apply new energy technologies.

Meeting the Challenges of Improved Technology Cooperation

Over the past three years, the Global Climate Coalition, the nation's leading business voice on global climate change issues, has participated in national and international panels on technology cooperation with representatives of Congress, the EPA, the DOC and the DOE. The coalition also has spoken on technology cooperation issues before the Intergovernmental Negotiating Committee (INC) and co-chaired a conference with the DOC on technology cooperation with Eastern Europe. Many of GCC's member companies have joint ventures and other projects through which they provide currently available energy and environmental technologies overseas.

For example, The Southern Company, one of the largest investor-owned electric utilities in the United States, has undertaken a study for the Slovak Power Enterprise on how to improve the environmental performance and reliability of a 1,320-megawatt power plant. Kaiser Aluminum is working with Russian officials to improve the environmental performance of a smelter in Siberia and is also providing technical services to smelters and refineries in other countries. This experience has given the coalition insight into the special considerations necessary for improving technology cooperation programs.

The federal government can greatly assist the private sector in efforts to improve technology cooperation through a number of measures, including:

Management of Environmental and Energy Technology. The Global Climate Coalition and other business groups have proposed establishing a business-initiated Management of Environmental and

Energy Technology (MEET) Corps as a mechanism to promote industry-led technology cooperation efforts. This program would send industry managers overseas to examine environmental and energy-related issues and to design solutions to problems such as reducing methane leakage in natural gas systems or increasing the energy efficiency of fossil-fuel power plants. With both greater cooperation from financial institutions and better access to government information on transfer opportunities, the Management of Environmental and Energy Technology (MEET) Corps could coordinate the United States' various programs and serve as a conduit for private industry assistance to many developing nations and countries with economies in transition.

Elimination of Impediments to Technology Cooperation. Although better coordination and communication between government and industry will facilitate technology cooperation, some issues still need to be addressed. Among the most important issues is the guarantee of intellectual property rights, including protection for patents, trademarks and copyrights. Without such a guarantee, companies will lack a strong incentive to pursue the work of technological and industrial innovation overseas. Also, the uncertainties surrounding antitrust implications should be resolved to encourage joint ventures among private firms, which will allow companies to merge their resources and develop and introduce new technologies more quickly and cost-effectively.

Assistance With Needs and Capabilities Assessments. Technology cooperation is an important component of the U.N. Framework Convention on Climate Change, which states, "The developed countries...shall take all practicable steps to promote, facilitate, and finance, as appropriate, the transfer or access to environmentally sound technologies and know-how to other parties, particularly developing countries...." Countries that have ratified the Framework Convention could include a "Technology Assessment" component in their National Action Plans. If properly prepared, the National Action Plans can provide a wealth of information about the abilities of countries to supply technology, as well as information crucial to identifying the needs of the countries wishing to receive technology. Only with this information can cooperative efforts be designed to be efficient and effective.

Other Measures. Multi-lateral financial institutions can provide loans or other types of funding to developing countries to bridge the gap between low-cost technologies and more expensive, but better, technologies from a U.S. company. The federal government also can organize workshops and conferences, both in the United States and overseas, to promote U.S. technology to developing countries, as well as support research, development, demonstration and commercialization programs. In addition, the government can encourage research and development across a broad spectrum of technology by offering tax credits and other incentives for companies and industries investing in new technology.

Summary

Improved technology cooperation between developed and developing nations and between the public and private sector will foster a stable foreign investment climate and contribute greatly to far-reaching environmental improvements in addition to increasing the number of high-wage jobs by opening new export markets for U.S. firms already established as world leaders.

The Global Climate Coalition is an organization of business trade associations and private companies established in 1989 to coordinate business participation in the scientific and policy debate on global climate change.